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California's Farm Labor Markets: A Cross-sectional Analysis of Employment and Earnings in 1991, 1996, and 2001

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Executive Summary

Production of labor-intensive fruit, vegetable and horticultural specialty crops increased in the 1990s, and so did the employment of farm workers as average annual employment rose about 16 percent, to almost 400,000. Far more individuals, however, are employed on California farms during the year. Agricultural employers reported 1.1 million individuals (unique Social Security Numbers) when they paid unemployment insurance (UI) taxes in 2001. In this paper, we use UI wage records to identify how many unique individuals were employed in California agriculture, and examine their employment and earnings patterns in 1991, 1996, and 2001.

The analysis highlights three important points about California's agricultural labor market:

1. The number of farm workers reported by farm employers **rose from 966,000 in 1996 to almost 1.1 million in 2001**, while average annual employment on the State's farms **fell from 408,000 in 1996 to 388,000 in 2001**.
2. The fastest growing employer of farm workers are **Farm Labor Contractors**, who paid the lowest annual averages wages, \$4,385 in 2001, much less than the average \$11,518 paid by vegetable farmers to workers they hire directly, and
3. Many farm workers work very few hours during the course of a year and renewed efforts to match these workers to unfilled jobs could be mutually beneficial.

Introduction

The agricultural labor market in California, the biggest in the nation, is a very complex employment sector. The factors that make this highly dynamic labor market so complex include the seasonal nature of farming, fluctuations in the demand for farm labor at the local level, the predominance of an international workforce, and the geographic mobility of farm workers within the State. Both farmers and policymakers need to know how the farm labor market functions because the timely availability of farm workers is one of the critical inputs needed to succeed in the farming business.

While the production of labor-intensive fruit, vegetable and horticultural specialty crops in California increased in the 1990s, the average employment (on a year round basis) of farm workers either rose slightly or stayed stagnant over the last decade or so. In 2001, according to Current Employment Statistics (CES) estimates, 388,000 workers were employed on California farms. The farm employers, however, reported 1.1 million individuals (unique Social Security Numbers) during the year when they paid unemployment insurance (UI) taxes, a much higher number than the CES average annual estimate. The difference between these two sources (CES and UI) is mainly due to the high turnover and seasonal nature of the agriculture sector.

This paper uses a unique database (UI wage records) to examine farm employment trends in California in the 1990s, and finds that: (1) about three individuals are employed for each year-round equivalent job in California agriculture, helping to explain low farm worker earnings; (2) that there was a shift in the 1990s from crop farmers hiring workers directly to farmers hiring workers via farm labor contractors (FLCs); and (3) there appears to be considerable scope for improving farm labor market efficiency, that is, using a smaller total farm workforce with each worker employed more hours and achieving higher earnings.

Agricultural Trends in California

Agriculture in California, measured in dollar sales, production, or acres, expanded in the 1990s. Farm sales reached \$27 billion in 2000, when 49 million tons of fruits and vegetables were harvested from a record 3.8 million acres (see Table 1). The fastest-growing subsector of agriculture is “fruits and nuts, vegetables and melons, and horticultural specialties (FVH)” such as flowers and nursery products; sales of these commodities were \$14 billion in 2000, over half of total farm sales. Rising yields meant that 31 percent more tons of vegetables and melons, for example, were produced from the same acreage between 1996 and 2000. The volume of production determines, *ceteris paribus*, how many workers need to be hired, and the fact that the tonnage of fruits and vegetables rose more than acreage in the 1990s meant that more workers were needed to harvest the increased yields. Contrary to

this premise, the CES estimates presented in Table 2 show that the average agricultural employment peaked at 408,300 in 1996 and then fell to 388,000 in 2001.

Table 1: California Crops: Harvested Acres: 1990-2000

Year	Field Crops		Fruits & Nuts		Vegs & Melons	
	Acreage	Production (Tons)	Acreage	Production (Tons)	Acreage	Production (Tons)
1990	5,233,715	25,141,401	2,002,650	13,051,525	1,185,790	21,149,460
1991	4,750,498	24,245,313	1,998,900	11,053,475	1,099,764	21,770,010
1992	4,926,284	24,731,653	2,012,500	13,492,350	1,061,976	18,659,660
1993	4,693,600	24,238,996	2,047,700	13,403,875	1,223,556	21,795,467
1994	4,913,800	25,980,008	2,092,350	13,748,800	1,327,502	25,047,912
1995	4,910,200	25,353,756	2,094,470	12,474,300	1,289,906	23,556,849
1996	5,029,000	25,276,521	2,155,050	13,112,150	1,382,228	25,252,871
1997	5,292,499	28,096,228	2,211,070	15,419,680	1,243,758	23,377,219
1998	5,161,274	26,875,266	2,249,650	13,359,825	1,351,526	28,028,170
1999	5,160,073	28,652,304	2,321,400	12,791,700	1,459,396	34,543,286
2000	5,035,220	28,528,069	2,383,760	15,486,300	1,380,064	33,077,470
1990-96	-3.9%	0.5%	7.6%	0.5%	16.6%	19.4%
1996-00	0.0%	13.0%	11.0%	18.0%	0.0%	31.0%

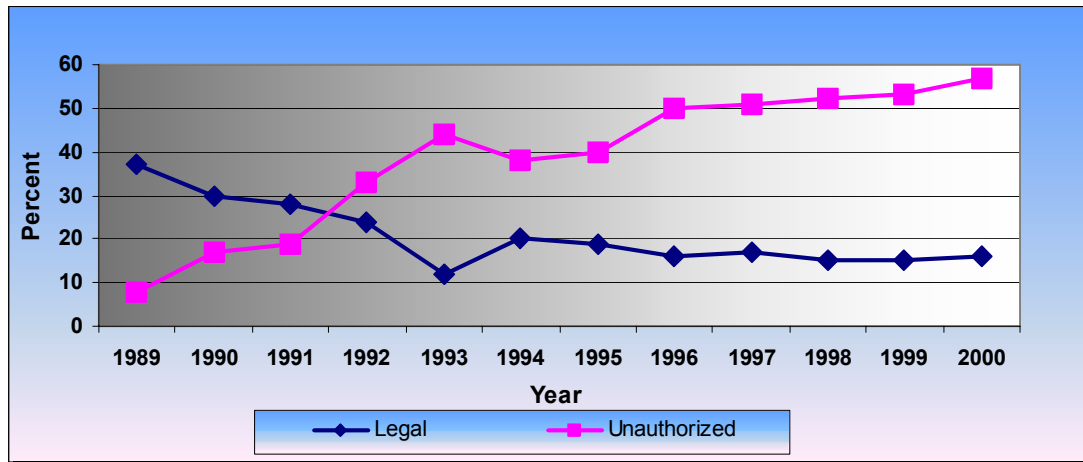
Source: California Agricultural Statistics Service (CASS)

Many FVH commodities are labor intensive, meaning that labor is 15 to 35 percent of production costs. Most of the workers employed on FVH farms are immigrants from Mexico, and a significant percentage are believed to be unauthorized (see Figure 1). There have been proposals from farm employers and farm worker advocates to reduce unauthorized worker employment in agriculture.

Mexican President Vincente Fox in September 2001 said an agreement was needed so that, "there are no Mexicans who have not entered this country [U.S.] legally, and that those Mexicans who come into the country do so with proper documents. Regularization does not mean rewarding those who break the law. Regularization means that we give legal rights to people who are already contributing to this great nation." President George Bush said, "when we find willing employer and willing employee, we ought to match the two. We ought to make it easier for people who want to employ somebody, who are looking for workers, to be able to hire people who want to work. And I know we can do so in a humane way that treats people with respect."

It appeared that the U.S. and Mexico were close to agreement on a program to legalize farm and other workers before September 11, 2001. However, after

Figure 1: Share of Legalized and Unauthorized Farm Workers: 1989-2000



Source: NAWS, <http://www.dol.gov/asp/programs/agworker/naws.htm>

the war on terror was declared, momentum toward a guest worker program, legalization of immigrants already in the country, or earned legalization (a program under which naturalization or legal status would be granted after a worker has worked at a farm for a certain number of days) has slowed.

No one knows exactly how many farm workers are unauthorized, or exactly what would happen if one of the three proposals being debated (guest workers, legalization, or earned legalization) was approved. In this paper, as stated, we use UI wage records to identify how many unique individuals were employed in California agriculture, and examine their employment and earnings patterns in 1991, 1996, and 2001.

Table 2: Total Employment, Average Ag Employment, and Unique SSNs: 1991, 1996, and 2001

	1991	1996	2001	1991-96	1996-01
California	12,701,000	13,151,700	15,084,600	4%	15%
Total Farm	342,000	408,300	388,000	19%	-5%
Farm Production	218,200	225,700	220,100	3%	-2%
Farm Services	123,800	182,600	168,000	47%	-8%
Unique SSNs	907,166	966,593	1,086,563	7%	12%
SSN/Employ Ratio	2.7	2.4	2.8	--	--

Source: CES estimates www.calmis.cahwnet.gov/file/indhist/calshws.xls and analysis of wage records by the Labor Market Information Division of EDD

Average, Peak, and Total Farm Employment

California employers who pay \$100 or more in quarterly wages are required to obtain an unemployment insurance (UI) reporting number from the California Employment Development Department (EDD), which assigns each employer or "reporting unit" a 4-digit Standard Industrial Classification (SIC)¹ or, since 2001, a 6-digit North American Industry Classification System (NAICS) code that

reflects the employer's major activity. Major activities are grouped in increasing levels of detail, e.g., agriculture, forestry and fisheries is classified as a major industrial sector and within this sector SIC 01 is assigned to crops, 017 to fruits and nuts, and 0172 to grapes.

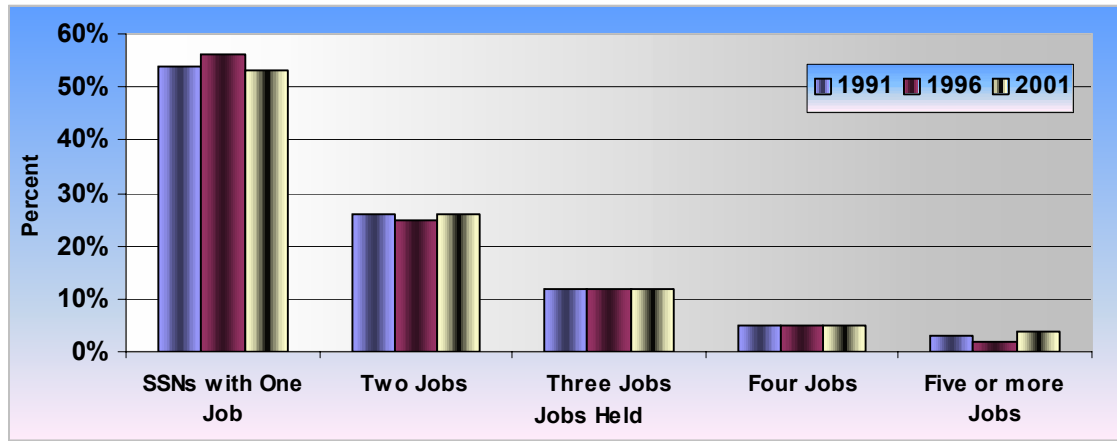
By defining "farm workers"² as persons reported by farm employers,³ their earnings in California's farm and nonfarm labor market can be examined. The individuals or unique Social Security Numbers (SSNs) reported by employers to EDD allow individual workers to be tracked over time, so that we can examine how many farm and nonfarm jobs particular individuals held in one year, in which commodity or county they had maximum earnings, and whether they returned to work on farms in successive years. Farm employers have reported their employees and earnings each quarter since 1978, when near-universal UI coverage was extended to agriculture. Although it is sometimes alleged that farm employers, especially farm labor contractors (FLCs), do not report all the workers they hire, there is no evidence that underreporting of agricultural employees is more common than in other industries that hire large numbers of seasonal workers, such as construction and personal services.

Agricultural employment can be measured in three major ways: at a point in time, as an average over time, or by counting the total number of individuals employed over some period of time. In the nonfarm labor market, where there is less seasonality, the three employment concepts often yield similar results—if 100 workers are employed during each month and there is no worker turnover from month to month, then point in time, average, and total employment is 100. However, agricultural employment during the six summer months may be 150, but only 50 during the six winter months, producing a peak-trough ratio of 3 (150 divided by 50). The peak-trough ratio for farm production employers (farmers who hire workers directly) was 1.5 in 2001, and for farm services employers (FLCs and others who bring workers to farms) it was 1.8.

Seasonality and turnover mean that total employment—the number of individuals employed in agriculture during the year—is higher than average or peak employment. In this paper, we identify how many unique individuals were employed in California agriculture, and examine their employment and earnings patterns throughout the year. We began with all SSNs reported by agricultural employers (those with SIC codes 01, 02, and 07), summed the jobs and earnings of these SSNs within each SIC code, and finally assigned each SSN to the 4-digit SIC code in which the worker had the highest earnings. This means that a SSN reported by a grape employer (0172) as well as by a farm labor contractor (0176) would be considered a grape worker if his highest-earning job was in grapes. In 2001, 53 percent of the SSNs were reported by only one employer to EDD, 26 percent were reported twice, 12 percent three times, 5 percent four times, and 4 percent five or more times (Figure 2).

We also excluded wage records or jobs that had less than \$1 in earnings and jobs that reported earnings of more than \$75,000 in one quarter. These adjustments eliminated from the analysis 2,750 SSNs, 62,571 wage records or jobs, and \$803 million in earnings, about 0.25, 2.7, and 6.1 percent of the totals, respectively⁴. There is no single explanation for the apparently erroneous data. In some cases, workers share SSNs; others represent data entry errors and name changes with marriage and so forth.

Figure 2: Number of Jobs Held in 1991, 1996, and 2001



Source: Analysis of wage records by the Labor Market Information Division of EDD

Employees, Jobs, and Earnings

Table 2 shows that the number of individuals or unique SSNs reported by California agricultural employers was remarkably stable over the past decade—907,166 in 1991, 966,593 in 1996, and 1,086,563 in 2001. However, average agricultural employment peaked in 1996 at 408,300 and then fell in 2001 to 388,000, suggesting that more workers “shared” fewer year-round equivalent jobs in 2001,⁵ even though SSNs were being “cleaned up” by the Social Security Administration in the late 1990s. As shown in Table 3, these “farm workers” had a total 1.5 million farm jobs in 1991, 1.7 million in 1996, and 1.8 million in 2001. About one-fourth of the “farm workers” also had at least one nonfarm job-- 407,000 workers in 1991, 453,000 in 1996, and 697,000 in 2001. Moreover, around 60 percent of the nonfarm jobs were in services and trade.

The total California earnings of persons employed in agriculture were \$11.1 billion in 1991, \$12.0 billion in 1996, and \$15.8 billion in 2001 (all in 2001 dollars).⁶ The share of the total earnings for “farm workers” from agricultural employers was 77 percent in 1991, 77 percent in 1996, and 71 percent in 2001, indicating that in the late 1990s, farm workers tended to increase their supplemental earnings via non-agricultural jobs.

Average earnings per employee were highest in livestock, about \$14,792 per employee in 2001. There was little difference between average earnings per employee in agricultural services, \$8,514, and crops, \$8,493.

Table 3: Farm Workers and Farm Jobs, 1991, 1996, 2001

1991					
SIC	Industry Title	Jobs	Employees	Earnings \$ Millions	Average Earnings \$/employee
01, 02, 07	Agriculture	1,540,769	907,166	8,558	9,434
01	Agricultural Production--Crops	684,130	482,511	3,943	8,171
02	Agricultural Production--Livestock	59,428	55,535	893	16,089
07	Agricultural Services	794,948	524,344	3,711	7,078
071, 072, 076	Ag Farm Services	646,215	432,794	1,986	4,590
074, 075, 078	Ag Non-Farm Services	148,733	136,902	1,725	12,600
Sub-Total	All Non-Ag	407,449	376,480	2,585	6,866
50-59 & 70-89	Trade and Services as % of All Non-Ag Jobs	57.8%	56.8%	52.0%	
Grand Total	Ag And Non-Ag	1,948,218	1,283,646	11,143	8,681
1996					
SIC	Industry Title	Jobs	Employees	Earnings \$ Millions	Average Earnings \$/employee
01, 02, 07	Agriculture	1,705,616	966,593	9,236	9,555
01	Agricultural Production--Crops	694,238	498,268	4,026	8,081
02	Agricultural Production--Livestock	54,496	51,368	830	16,151
07	Agricultural Services	953,261	589,032	4,369	7,418
071, 072, 076	Ag Farm Services	786,422	489,633	2,428	4,960
074, 075, 078	Ag Non-Farm Services	166,839	152,422	1,941	12,734
Sub-Total	All Non-Ag	453,000	408,265	2,718	6,657
50-59 & 70-89	Trade and Services as % of All Non-Ag Jobs	60.3%	58.8%	55.5%	
Grand Total	Ag And Non-Ag	2,158,616	1,374,858	11,954	8,695
2001					
SIC	Industry Title	Jobs	Employees	Earnings \$ Millions	Average Earnings \$/employee
01, 02, 07	Agriculture	1,809,503	1,086,563	11,128	10,241
01	Agricultural Production--Crops	630,428	474,195	4,027	8,493
02	Agricultural Production--Livestock	68,575	63,854	945	14,792
07	Agricultural Services	1,107,796	721,655	6,144	8,514
071, 072, 076	Ag Farm Services	817,708	507,231	2,530	4,987
074, 075, 078	Ag Non-Farm Services	290,088	264,366	3,614	13,671
Sub-Total	All Non-Ag	697,334	609,746	4,629	7,592
50-59 & 70-89	Trade and Services as % of All Non-Ag Jobs	59.7%	57.9%	55.0%	
Grand Total	Ag And Non-Ag	2,506,837	1,696,309	15,757	9,289

Source: Analysis of wage records by the Labor Market Information Division of EDD

For workers employed in agriculture and in nonfarm jobs, average earnings per employee were higher in agriculture than in nonfarm jobs, \$10,241 versus \$7,592, suggesting that in 2001 farm work fared better than nonfarm work and the time spent in nonfarm jobs may be “salvage time,” time when farm jobs are not available.

Primary Farm Workers and Jobs

California’s farm workers in 2001 held 2.5 million jobs, including 1.8 million jobs with agricultural employers (Appendix Table 1). These agricultural jobs included 630,000 in crops, 69,000 in livestock, and 1.1 million in agricultural services. Fruits and nuts accounted for 53 percent of the crop jobs, dairy for 39 percent of the livestock jobs, and farm labor contractors for 58 percent of the agricultural services jobs. The major change between 1991 and 2001 was the drop of 54,000 jobs in crop production and the increase of 313,000 jobs in agricultural services.

We used the data to generate tables in which workers could be placed in a detailed commodity or SIC that reflects the activity of the employer(s) who reported the most earnings for the worker. Appendix Table 2 presents detailed data that assign workers to their “primary” or highest-earning SIC. In 2001, there were 877,000 primary farm workers, and they included 322,000 reported by crop employers, 50,000 reported by livestock employers, and 504,000 reported by agricultural service employers. Fruit and nut employers accounted for 47 percent of the crop-reported workers, dairy for 40 percent of the livestock-reported workers, and FLCs for 44 percent of the agricultural services-reported workers.⁷

The major change between 1991 and 2001 was the increase of 179,000 SSNs or workers reported by agricultural employers—the number of “farm workers” with their primary (highest-earning) job in agriculture rose from 758,000 to more than 877,000. There was a slight drop in workers reported by crop employers, a slight increase in livestock workers, and a sharp 135,000 increase in agricultural services workers, anchored by a 59,000 increase, to 226,000, in workers reported by FLCs in 2001.

Appendix Table 2 shows that most SSNs were reported by only one agricultural employer: in 2001, 573,000 were reported only once by an agricultural employer; 153,000 were reported by two or more agricultural employers; 42,000 were reported at least once by an agricultural employer and a nonfarm employer; and 109,000 were reported by at least two agricultural and one nonfarm employer. This pattern did not change in the 1990s: about 65 percent of workers were reported by one agricultural employer, 17 to 21 percent by two agricultural employers, 5 percent by at least 2 agricultural employers and one nonfarm employer, and 9 to 12 percent by one farm and one nonfarm employer.

Appendix Table 2 also presents the distribution of workers reported by agricultural employers in more detailed SIC codes that distinguish, for example, vegetables from fruits and nuts. In most of these 3-digit commodity sectors, 60 to 83 percent of the employees had only one job, e.g., in 2001, 79 percent of the employees reported by dairy farms had one dairy farm job, while 7 percent also had a second agricultural job, and 3 percent had a dairy job, a second farm job, and a nonfarm job, and 11 percent had a nonfarm job in addition to the dairy job. About two-thirds of the employees of farm labor contractors and farm management companies had only jobs with one such employer; 22 percent had another farm job; 6 percent had an FLC job, another farm job and a nonfarm job; and 6 percent had a nonfarm job in addition to the FLC job.

More detailed 4-digit SIC codes show the same pattern, that is, the commodities or SICs most likely to offer year-round jobs such as dairies and other livestock and mushrooms (food crops grown under cover) have 70 to 80 percent of employees working only in that commodity, while commodities or SICs offering more seasonal jobs, such as deciduous tree fruits and farm labor contractors, have 53 to 63 percent of employees working only in that commodity. At the 4-digit SIC code level, except lawn and garden services (non-agricultural services), most wages were paid by farm labor contractors, ornamental nursery products, crop preparation services (custom harvesters), grape employers, and vegetable and melon employers. These Big 5 SICs accounted for about 45 percent of the agricultural wages reported.⁸

Earnings and Estimates of Hours Worked

Table 3 showed that agricultural employers (SIC 01, 02, and 07) paid a total of \$11 billion in wages in 2001, an average \$10,200 per worker. Earnings are highest for the 64,000 workers primarily employed in livestock in 2001; they averaged \$14,800, followed by those primarily employed by crop employers, \$8,500, and by those employed by agricultural farm services, custom harvesters and FLCs, \$5,000. There is considerable variation in earnings among workers in agricultural farm services (see Table 4): workers in SIC 0711, soil preparation services, averaged \$21,100 in 2001, versus \$12,700 for SIC 0723, crop preparation services for market (custom harvesters), and \$4,400 for employees of FLCs.

Table 4 also shows that the average earnings of all farm workers vary significantly, even within detailed 4-digit SIC codes. In most cases, the standard deviation exceeds the mean wage, and median earnings are generally less than mean earnings, reflecting the fact that the mean is pulled up by higher-wage supervisors and farm managers.

If the farm workers in detailed commodities are ranked from lowest-to-highest paid, the lowest 25 percent of earners generally earn less than \$4,000 a year. For example, among workers primarily employed in vegetables and melons in

2001 (SIC 0161), the first quartile or 25th percentile annual earnings was \$3,000 in 2001. If these workers earned the state's minimum wage \$6.25 an hour in 2001, they worked 480 hours. The 25th percentile was lowest for those employed primarily by FLCs, only \$634, suggesting that workers employed at the minimum wage worked 101 hours. The highest 25th percentile mark was in mushrooms (food grown under cover), \$9,491, reflecting 1,519 hours of work at the minimum wage.

Table 4: Earnings of Primary Employees (\$), 2001

Industry Title	SIC	Primary Workers	Mean Earnings	Std Dev	Median Earnings	Hours worked 8.02/hr ⁹	25th Prcntle Earning	Hours worked 6.25/hr	75th Prcntle Earning	Hours worked 10/hr	Total Earnings (mils)
Cotton	0131	7,409	15,156	15,705	12,243	1,527	3,692	591	21,622	2,162	112
Vegetables and Melons	0161	55,052	11,518	13,721	8,107	1,011	3,036	486	15,226	1,523	634
Berry crops	0171	32,018	7,958	8,756	6,735	840	3,486	558	10,029	1,003	255
Grapes	0172	66,199	8,799	13,287	4,662	581	1,518	243	10,572	1,057	583
Tree nuts	0173	12,453	10,654	13,084	6,278	783	2,160	346	15,274	1,527	133
Citrus fruits	0174	5,367	11,923	13,612	7,597	947	2,665	426	17,480	1,748	64
Deciduous tree fruits	0175	23,220	6,116	8,082	3,960	494	1,530	245	7,633	763	142
Fruits and tree nuts, nec	0179	12,523	9,275	11,237	5,972	745	2,226	356	12,960	1,296	116
Ornamental nursery products	0181	49,635	17,753	19,872	13,357	1,665	5,410	866	21,252	2,125	881
Food crops grown under cover	0182	6,109	22,764	18,227	20,504	2,557	9,491	1,519	29,465	2,947	139
General farms, primarily crop	0191	41,211	9,633	13,176	5,444	679	1,710	274	13,274	1,327	397
Beef cattle feedlots	0211	1,120	17,205	16,281	14,796	1,845	5,678	908	22,985	2,299	19
Dairy farms	0241	20,167	17,767	12,099	18,030	2,248	7,990	1,278	25,150	2,515	358
Soil preparation services	0711	2,630	21,069	23,021	12,886	1,607	5,684	909	29,740	2,974	55
Crop preparation services for market	0723	54,416	12,707	17,608	7,445	928	2,921	467	15,432	1,543	691
Farm labor contractors	0761	225,934	4,385	6,171	2,650	330	634	101	6,172	617	991
Farm management services	0762	15,974	11,991	16,304	6,724	838	2,265	362	16,500	1,650	192
Lawn and garden services	0782	109,402	14,454	15,131	11,264	1,404	4,615	738	18,934	1,893	1,581

Source: Analysis of wage records by the Labor Market Information Division of EDD

The 75th percentile marks the highest earnings that a non-supervisory worker could normally expect to achieve in a commodity—75 percent of workers reported earned less than this amount, and 25 percent earned more. The 75th percentile varied widely by commodity: \$6,172 for those primarily employed by FLCs, \$10,572 for those primarily employed in grapes, and \$29,465 for those employed in mushrooms

Conclusions

Employment reported by agricultural employers increased in the 1990s, reflecting increased production of more labor-intensive fruit and vegetable crops. About 1.1 million unique SSNs are reported by agricultural employers

each year to state UI authorities, and most of these “farm workers” have relatively low earnings from their one California employer. With the state’s minimum wage at \$6.25 an hour after January 1, 2001 (and \$6.75 an hour since January 1, 2002), earnings data suggest that most workers are employed on the state’s farms fewer than 1,000 hours a year. Indeed, in 2001, there were about 2.8 individuals employed by agricultural employers for each year-round equivalent job in agriculture.

The major change in the 1990s was the rising share of workers reported by farm labor contractors. Some commodities are more dependent on workers supplied by FLCs than others, e.g., many citrus workers are reported by FLCs rather than citrus growers, while most dairy workers are reported by dairy employers. FLCs are associated with low-earnings, which suggests few hours of work. The median earnings reported by FLCs for their employees in 2001 were \$2,650, or 400 hours if workers earned the state’s \$6.25 minimum wage.

The large number of “farm workers” with low earnings and few hours of work presents opportunities and challenges for farm employers, worker advocates, and the State. There are a large number of persons with farm work experience, but most do relatively little farm work. Developing policies to allow current farm workers to obtain more hours of work would raise worker earnings and offset fears of labor shortages, benefiting both farm employers and workers.

Future Research

The analysis presented in this paper portrays three cross-sectional snapshots of California’s farm labor markets—1991, 1996, and 2001. However, we have not touched on the longitudinal mobility of “individual” farm workers, both economic and geographic, that would complement the cross-sectional picture presented here. In the future, we intend to examine questions similar to those addressed in Dardia and Moore et al¹⁰: do farm workers who increase their earnings by moving to nonfarm jobs stay in nonfarm jobs, or do they sometimes return to agriculture; do most farm workers who get nonfarm jobs leave the area (geographic and industry-occupation mobility), or stay in the area (industry-occupation mobility); and do these mobility patterns vary around the State?

Appendix

Table 1: California Agricultural Employees and Earnings: 1991, 1996, 2001

SIC	Industry Title	1991			1996			2001		
		Jobs	Employees	Earnings \$ Millions	Jobs	Employees	Earnings \$ Millions	Jobs	Employees	Earnings \$ Millions
01	Agricultural Production--Crops	684,130	482,511	3,943	694,238	498,268	4,026	630,428	474,195	4,027
011	Cash Grains	9,496	8,693	59	7,557	6,723	54	6,659	5,861	52
0111	Wheat	913	904	6	411	407	3	474	471	3
0112	Rice	4,646	4,129	32	4,919	4,244	33	4,258	3,692	33
0115	Corn	320	319	3	283	277	2	323	314	2
0116	Soybeans	15	15	0	2	2	0	27	27	0
0119	Cash grains, nec	3,602	3,488	18	1,942	1,915	16	1,577	1,420	13
013	Field Crops, except Cash Grains	33,352	30,028	258	33,776	30,212	276	25,383	23,822	223
0131	Cotton	17,475	15,614	157	19,628	17,329	168	12,153	11,463	121
0133	Sugarcane and sugar beets	890	881	7	580	571	4	411	404	3
0134	Irish potatoes	2,899	2,580	14	2,894	2,678	17	1,856	1,800	15
0139	Field crops, except cash grains, ne	12,088	11,697	80	10,674	10,062	87	10,957	10,394	84
016	Vegetables and Melons	88,453	81,621	641	103,917	94,170	699	97,702	90,770	704
0161	Vegetables and melons	88,453	81,621	641	103,917	94,170	699	97,702	90,770	704
017	Fruits and Tree Nuts	363,695	258,122	1,491	372,616	270,788	1,533	333,355	251,577	1,500
0171	Berry crops	57,297	47,699	263	59,874	48,898	269	57,958	46,353	293
0172	Grapes	161,595	115,546	628	161,953	120,922	601	162,359	125,590	675
0173	Tree nuts	25,794	22,825	124	26,569	23,498	152	23,619	21,610	149
0174	Citrus fruits	13,560	12,764	96	15,511	14,709	119	10,379	10,076	72
0175	Deciduous tree fruits	66,425	55,319	219	75,149	62,167	242	55,118	47,557	177
0179	Fruits and tree nuts, nec	39,024	35,731	161	33,560	31,660	149	23,922	22,959	133
018	Horticultural Specialties	68,488	65,340	903	71,626	68,951	955	78,621	75,858	1,087
0181	Ornamental nursery products	59,260	56,294	706	63,709	61,211	769	71,000	68,432	943
0182	Food crops grown under cover	9,228	9,163	197	7,917	7,878	185	7,621	7,574	144
019	General Farms, Primarily Crop	120,646	107,401	591	104,746	95,825	510	88,708	82,015	461
0191	General farms, primarily crop	120,646	107,401	591	104,746	95,825	510	88,708	82,015	461
02	Agricultural Production--Livestock	59,428	55,535	893	54,496	51,368	830	68,575	63,854	945
021	Livestock, Except Dairy And Poultry	11,295	10,934	134	9,801	9,516	126	13,482	13,050	168
0211	Beef cattle feedlots	1,365	1,338	22	943	928	14	1,747	1,732	22
0212	Beef cattle, except feedlots	8,269	8,062	98	7,357	7,173	99	8,209	8,090	110
0213	Hogs	396	394	5	356	355	5	273	273	4
0214	Sheep and goats	1,095	1,065	8	1,005	971	8	3,163	3,149	32
0219	General livestock, nec	170	170	1	140	140	1	90	90	1
024	Dairy Farms	21,465	19,405	324	22,048	20,017	327	26,917	24,145	378
0241	Dairy farms	21,465	19,405	324	21,924	20,017	327	26,917	24,145	378
025	Poultry and Eggs	20,510	19,662	367	18,134	17,734	322	21,609	20,624	323
0251	Broiler, fryer, and roaster chicken	9,124	9,104	189	7,388	7,372	142	8,035	8,008	111
0252	Chicken eggs	5,472	5,142	80	3,831	3,680	57	3,608	3,319	51
0253	Turkeys and turkey eggs	4,772	4,665	85	5,697	5,683	112	8,095	8,081	145
0254	Poultry hatcheries	680	652	6	326	325	3	595	595	4
0259	Poultry and eggs, nec	462	460	6	892	887	9	1,276	1,271	12

Table 1: California Agricultural Employees and Earnings: 1991, 1996, 2001

SIC	Industry Title	1991			1996			2001		
		Jobs	Employees	Earnings \$ Millions	Jobs	Employees	Earnings \$ Millions	Jobs	Employees	Earnings \$ Millions
027	Animal Specialties	4,103	4,051	47	3,589	3,550	43	5,121	5,061	60
0271	Fur-bearing animals and rabbits	72	72	1	69	69	0	73	72	1
0272	Horses and other equines	1,317	1,303	14	1,158	1,151	13	1,880	1,849	20
0273	Animal aquaculture	1,189	1,183	15	740	736	11	750	739	11
0279	Animal specialties, nec	1,525	1,497	17	1,622	1,595	18	2,418	2,401	28
029	General Farms, Primarily Animal	2,055	2,051	21	924	919	12	1,446	1,443	16
0291	General farms, primarily animal	2,055	2,051	21	924	919	12	1,446	1,443	16
07	Agricultural Services	794,948	524,344	3,711	953,261	589,032	4,369	1,107,796	721,655	6,144
0711	Soil preparation services	2,180	2,157	30	3,826	3,808	50	3,787	3,765	59
0721	Crop planting and protecting	14,223	13,831	124	18,119	17,730	141	17,973	17,616	142
0722	Crop harvesting	33,166	31,692	184	40,143	36,964	162	17,622	17,137	112
0723	Crop preparation services for market	96,300	90,050	664	93,703	87,997	771	93,392	87,559	752
0724	Cotton ginning	3,354	3,315	38	3,420	3,388	43	4,346	4,322	32
0741	Veterinary services for livestock	463	458	9	392	392	9	2,229	2,204	32
0742	Veterinary services, specialties	27,754	24,323	379	31,527	27,185	425	40,331	34,199	556
0751	Livestock services, exc. veterinary	2,170	2,157	49	1,182	1,176	15	984	979	13
0752	Animal specialty services	11,707	11,339	101	9,718	9,439	91	15,598	15,293	175
0761	Farm labor contractors	464,954	279,480	770	595,187	328,738	1,052	643,181	358,520	1,208
0762	Farm management services	32,038	30,936	175	32,024	30,992	211	37,407	35,915	226
0781	Landscape counseling and planning	10,494	10,319	170	15,460	15,311	266	35,397	35,173	821
0782	Lawn and garden services	87,605	81,460	901	95,804	88,513	960	176,276	162,220	1,779
0783	Ornamental shrub and tree services	8,540	8,235	116	12,756	12,296	175	19,263	18,538	239
01, 02, 07	Agriculture	1,540,769	907,166	8,558	1,705,616	966,593	9,236	1,809,503	1,086,563	11,128
071, 072, 076	Ag Farm Services	646,215	432,794	1,986	786,422	489,633	2,428	817,708	507,231	2,530
074, 075, 078	Ag Non-Farm Services	148,733	136,902	1,725	166,839	152,422	1,941	290,088	264,366	3,614
08 - 09	Forestry & Fishing	2,263	2,150	11	3,621	3,495	11	2,704	2,627	12
10 - 14	Mining	1,200	1,120	14	534	516	7	856	834	11
15 - 17	Construction	40,602	36,586	235	44,526	39,327	245	97,684	79,732	657
20 - 39	Manufacturing	84,903	81,047	595	85,344	80,780	616	115,379	111,489	865
40 - 49	Transportation	20,894	19,946	181	22,845	21,883	176	29,765	28,276	264
50 - 59	Trade	126,936	113,413	672	129,743	111,843	700	185,596	153,102	1,097
60 - 67	FIRE	12,252	11,955	143	10,864	10,528	102	16,290	15,698	189
70 - 89	Services	108,451	100,505	672	143,503	128,230	810	230,576	199,939	1,446
91 - 98	Public Administration	2,374	2,349	40	2,113	2,085	30	2,837	2,803	41
> = 99	All Other SICs	7,574	7,409	22	9,907	9,578	22	15,647	15,246	45
Sub-Total	All Non-Ag	407,449	376,480	2,585	453,000	408,265	2,718	697,334	609,746	4,629
Total	Ag And Non-Ag	1,948,218	1,283,646	11,143	2,158,616	1,374,858	11,954	2,506,837	1,696,309	15,757
	Non-Ag Jobs Percent of Ag Jobs	20.9	29.3	23.2	21.0	29.7	22.7	27.8	35.9	29.4

Table 2: Primary Jobs Analysis, 1991

1991											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
01, 02, 07	Agriculture	757,714	7,815	498,287	153,885	36,535	69,007	66%	20%	5%	9%
01	Agricultural Production--Crops	343,060	3,590	219,749	78,175	18,337	26,799	64%	23%	5%	8%
02	Agricultural Production--Livestock	45,225	856	35,394	3,602	954	5,275	78%	8%	2%	12%
07	Agricultural Services	368,547	3,360	242,813	71,748	17,127	36,859	66%	19%	5%	10%
011	Cash Grains	4,545	52	2,981	933	239	392	66%	21%	5%	9%
013	Field Crops, except Cash Grains	18,608	238	11,988	4,434	860	1,326	64%	24%	5%	7%
016	Vegetables and Melons	52,035	594	34,266	12,078	2,339	3,352	66%	23%	4%	6%
017	Fruits and Tree Nuts	162,412	1,320	98,514	41,221	10,393	12,284	61%	25%	6%	8%
018	Horticultural Specialties	49,441	864	38,072	4,123	1,310	5,936	77%	8%	3%	12%
019	General Farms, Primarily Crop	56,019	523	33,928	15,386	3,196	3,509	61%	27%	6%	6%
021	Livestock, Except Dairy And Poultry	8,121	126	6,058	722	181	1,160	75%	9%	2%	14%
024	Dairy Farms	16,177	314	13,366	1,133	286	1,392	83%	7%	2%	9%
025	Poultry and Eggs	16,682	353	12,849	1,326	372	2,135	77%	8%	2%	13%
027	Animal Specialties	2,858	42	2,071	252	71	464	72%	9%	2%	16%
029	General Farms, Primarily Animal	1,387	20	1,050	169	44	124	76%	12%	3%	9%
071, 072, 076	Ag Farm Services	263,720	1,724	162,343	67,779	15,471	18,127	62%	26%	6%	7%
074, 075, 078	Ag Non-Farm Services	104,827	1,636	80,470	3,969	1,656	18,732	77%	4%	2%	18%
0111	Wheat	441	5	267	142	15	17	61%	32%	3%	4%
0112	Rice	2,272	28	1,537	377	138	220	68%	17%	6%	10%
0115	Corn	192	3	107	32	17	36	56%	17%	9%	19%
0116	Soybeans	4	0	4	0	0	0	100%	0%	0%	0%
0119	Cash grains, nec	1,636	16	1,066	382	69	119	65%	23%	4%	7%
0131	Cotton	10,000	147	6,464	2,464	424	648	65%	25%	4%	6%
0133	Sugarcane and sugar beets	447	6	288	84	17	58	64%	19%	4%	13%
0134	Irish potatoes	1,579	13	1,060	301	72	146	67%	19%	5%	9%
0139	Field crops, except cash grains, ne	6,582	73	4,176	1,585	347	474	63%	24%	5%	7%
0161	Vegetables and melons	52,035	594	34,266	12,078	2,339	3,352	66%	23%	4%	6%
0171	Berry crops	34,566	240	23,966	6,321	1,559	2,720	69%	18%	5%	8%
0172	Grapes	62,989	559	36,479	16,913	4,587	5,010	58%	27%	7%	8%
0173	Tree nuts	11,636	107	7,212	2,775	721	928	62%	24%	6%	8%
0174	Citrus fruits	7,113	89	4,926	1,353	292	542	69%	19%	4%	8%
0175	Deciduous tree fruits	28,441	184	15,445	8,898	2,136	1,962	54%	31%	8%	7%
0179	Fruits and tree nuts, nec	17,667	140	10,486	4,961	1,098	1,122	59%	28%	6%	6%
0181	Ornamental nursery products	41,835	672	31,982	3,784	1,187	4,882	76%	9%	3%	12%
0182	Food crops grown under cover	7,606	192	6,090	339	123	1,054	80%	4%	2%	14%
0191	General farms, primarily crop	56,019	523	33,928	15,386	3,196	3,509	61%	27%	6%	6%
0211	Beef cattle feedlots	1,048	21	845	92	14	97	81%	9%	1%	9%
0212	Beef cattle, except feedlots	5,920	92	4,277	518	144	981	72%	9%	2%	17%
0213	Hogs	270	5	194	48	14	14	72%	18%	5%	5%
0214	Sheep and goats	788	7	674	55	8	51	86%	7%	1%	6%
0219	General livestock, nec	95	1	68	9	1	17	72%	9%	1%	18%

Table 2: Primary Jobs Analysis, 1991

1991											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
0241	Dairy farms	16,177	314	13,366	1,133	286	1,392	83%	7%	2%	9%
0251	Broiler, fryer, and roaster chicken	7,797	183	5,926	543	175	1,153	76%	7%	2%	15%
0252	Chicken eggs	4,213	77	3,450	211	68	484	82%	5%	2%	11%
0253	Turkeys and turkey eggs	3,865	82	2,895	485	104	381	75%	13%	3%	10%
0254	Poultry hatcheries	447	6	303	61	20	63	68%	14%	4%	14%
0259	Poultry and eggs, nec	360	6	275	26	5	54	76%	7%	1%	15%
0271	Fur-bearing animals and rabbits	46	0	37	3	1	5	80%	7%	2%	11%
0272	Horses and other equines	998	13	741	77	25	155	74%	8%	3%	16%
0273	Animal aquaculture	714	12	457	86	29	142	64%	12%	4%	20%
0279	Animal specialties, nec	1,100	16	836	86	16	162	76%	8%	1%	15%
0291	General farms, primarily animal	1,387	20	1,050	169	44	124	76%	12%	3%	9%
0711	Soil preparation services	1,383	28	1,001	152	51	179	72%	11%	4%	13%
0721	Crop planting and protecting	7,902	115	5,087	1,714	339	762	64%	22%	4%	10%
0722	Crop harvesting	16,709	155	9,179	5,453	974	1,103	55%	33%	6%	7%
0723	Crop preparation services for market	54,603	609	33,197	12,962	2,965	5,479	61%	24%	5%	10%
0724	Cotton ginning	2,248	34	1,179	631	169	269	52%	28%	8%	12%
0741	Veterinary services for livestock	344	9	272	18	3	51	79%	5%	1%	15%
0742	Veterinary services, specialties	19,120	364	15,062	215	109	3,734	79%	1%	1%	20%
0751	Livestock services, exc. veterinary	1,742	48	1,321	86	31	304	76%	5%	2%	17%
0752	Animal specialty services	7,774	93	5,890	308	116	1,460	76%	4%	1%	19%
0761	Farm labor contractors	166,525	626	104,465	42,483	10,143	9,434	63%	26%	6%	6%
0762	Farm management services	14,350	157	8,235	4,384	830	901	57%	31%	6%	6%
0781	Landscape counseling and planning	7,739	162	5,868	467	174	1,230	76%	6%	2%	16%
0782	Lawn and garden services	61,742	849	47,233	2,641	1,117	10,751	77%	4%	2%	17%
0783	Ornamental shrub and tree services	6,366	111	4,824	234	106	1,202	76%	4%	2%	19%
08 - 09	Forestry & Fishing	882	9	331	360	117	74	38%	41%	13%	8%
10 - 14	Mining	586	12	0	358	228	0	0%	61%	39%	0%
15 - 17	Construction	14,389	186	0	8,611	5,763	15	0%	60%	40%	0%
20 - 39	Manufacturing	37,027	460	0	24,993	12,001	33	0%	67%	32%	0%
40 - 49	Transportation	7,886	155	0	5,203	2,658	25	0%	66%	34%	0%
50 - 59	Trade	44,502	513	0	28,471	15,982	49	0%	64%	36%	0%
60 - 67	FIRE	5,564	123	0	3,579	1,981	4	0%	64%	36%	0%
70 - 89	Services	36,418	525	0	22,559	13,812	47	0%	62%	38%	0%
91 - 98	Public Administration	1,258	36	0	804	452	2	0%	64%	36%	0%
> = 99	All Other SICs	1,822	12	0	1,289	521	12	0%	71%	29%	1%

Table 2: Primary Jobs Analysis, 1996

1996											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers plus 1 Non-Ag	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
01, 02, 07	Agriculture	817,858	8,401	536,078	167,738	38,109	75,933	66%	21%	5%	9%
01	Agricultural Production--Crops	350,700	3,640	225,115	80,606	17,433	27,546	64%	23%	5%	8%
02	Agricultural Production--Livestock	41,999	799	33,691	2,915	907	4,486	80%	7%	2%	11%
07	Agricultural Services	424,031	3,953	276,680	83,828	19,676	43,847	65%	20%	5%	10%
011	Cash Grains	3,978	48	2,564	792	218	404	64%	20%	5%	10%
013	Field Crops, except Cash Grains	19,567	257	13,558	3,959	741	1,309	69%	20%	4%	7%
016	Vegetables and Melons	58,281	643	38,305	14,050	2,443	3,483	66%	24%	4%	6%
017	Fruits and Tree Nuts	168,153	1,339	101,613	43,859	9,974	12,707	60%	26%	6%	8%
018	Horticultural Specialties	51,596	907	38,858	4,619	1,456	6,663	75%	9%	3%	13%
019	General Farms, Primarily Crop	49,125	446	30,217	13,327	2,601	2,980	62%	27%	5%	6%
021	Livestock, Except Dairy And Poultry	7,153	120	5,568	604	186	795	78%	8%	3%	11%
024	Dairy Farms	16,921	315	13,981	1,209	363	1,368	83%	7%	2%	8%
025	Poultry and Eggs	14,688	313	11,736	875	299	1,778	80%	6%	2%	12%
027	Animal Specialties	2,573	40	1,910	154	48	461	74%	6%	2%	18%
029	General Farms, Primarily Animal	664	11	496	73	11	84	75%	11%	2%	13%
071, 072, 076	Ag Farm Services	310,227	2,145	192,415	79,660	17,687	20,465	62%	26%	6%	7%
074, 075, 078	Ag Non-Farm Services	113,804	1,808	84,265	4,168	1,989	23,382	74%	4%	2%	21%
0111	Wheat	244	3	164	59	5	16	67%	24%	2%	7%
0112	Rice	2,425	29	1,573	433	144	275	65%	18%	6%	11%
0115	Corn	162	2	110	23	11	18	68%	14%	7%	11%
0116	Soybeans	2	0	2	0	0	0	100%	0%	0%	0%
0119	Cash grains, nec	1,145	14	715	277	58	95	62%	24%	5%	8%
0131	Cotton	10,957	157	7,610	2,297	402	648	69%	21%	4%	6%
0133	Sugarcane and sugar beets	364	4	213	111	13	27	59%	30%	4%	7%
0134	Irish potatoes	1,746	15	1,245	285	70	146	71%	16%	4%	8%
0139	Field crops, except cash grains, ne	6,500	81	4,490	1,266	256	488	69%	19%	4%	8%
0161	Vegetables and melons	58,281	643	38,305	14,050	2,443	3,483	66%	24%	4%	6%
0171	Berry crops	34,805	242	23,119	6,991	1,725	2,970	66%	20%	5%	9%
0172	Grapes	64,376	523	37,060	18,463	4,070	4,783	58%	29%	6%	7%
0173	Tree nuts	13,028	135	8,293	2,836	745	1,154	64%	22%	6%	9%
0174	Citrus fruits	7,735	109	5,020	1,779	271	665	65%	23%	4%	9%
0175	Deciduous tree fruits	32,407	201	18,183	9,724	2,360	2,140	56%	30%	7%	7%
0179	Fruits and tree nuts, nec	15,802	129	9,938	4,066	803	995	63%	26%	5%	6%
0181	Ornamental nursery products	44,764	725	33,229	4,372	1,351	5,812	74%	10%	3%	13%
0182	Food crops grown under cover	6,832	182	5,629	247	105	851	82%	4%	2%	12%
0191	General farms, primarily crop	49,125	446	30,217	13,327	2,601	2,980	62%	27%	5%	6%
0211	Beef cattle feedlots	705	13	513	90	16	86	73%	13%	2%	12%
0212	Beef cattle, except feedlots	5,344	94	4,140	436	149	619	77%	8%	3%	12%
0213	Hogs	243	4	182	24	8	29	75%	10%	3%	12%
0214	Sheep and goats	770	7	661	51	9	49	86%	7%	1%	6%
0219	General livestock, nec	91	1	72	3	4	12	79%	3%	4%	13%

1996											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
0241	Dairy farms	16,921	315	13,981	1,209	363	1,368	83%	7%	2%	8%
0251	Broiler, fryer, and roaster chicken	6,103	138	4,822	399	117	765	79%	7%	2%	13%
0252	Chicken eggs	2,997	55	2,408	158	65	366	80%	5%	2%	12%
0253	Turkeys and turkey eggs	4,786	109	3,926	258	89	513	82%	5%	2%	11%
0254	Poultry hatcheries	225	3	181	20	5	19	80%	9%	2%	8%
0259	Poultry and eggs, nec	577	8	399	40	23	115	69%	7%	4%	20%
0271	Fur-bearing animals and rabbits	47	0	37	3	0	7	79%	6%	0%	15%
0272	Horses and other equines	797	12	606	44	16	131	76%	6%	2%	16%
0273	Animal aquaculture	554	11	402	23	13	116	73%	4%	2%	21%
0279	Animal specialties, nec	1,175	18	865	84	19	207	74%	7%	2%	18%
0291	General farms, primarily animal	664	11	496	73	11	84	75%	11%	2%	13%
0711	Soil preparation services	2,554	47	1,638	449	150	317	64%	18%	6%	12%
0721	Crop planting and protecting	9,025	130	5,997	1,780	387	861	66%	20%	4%	10%
0722	Crop harvesting	17,275	141	9,915	5,462	899	999	57%	32%	5%	6%
0723	Crop preparation services for marke	56,313	718	36,619	11,394	2,675	5,625	65%	20%	5%	10%
0724	Cotton ginning	2,395	39	1,353	654	120	268	56%	27%	5%	11%
0741	Veterinary services for livestock	277	8	217	13	6	41	78%	5%	2%	15%
0742	Veterinary services, specialties	21,282	408	16,450	352	153	4,327	77%	2%	1%	20%
0751	Livestock services, exc. veterinary	829	14	628	63	32	106	76%	8%	4%	13%
0752	Animal specialty services	6,690	84	4,982	226	128	1,354	74%	3%	2%	20%
0761	Farm labor contractors	207,559	882	128,442	55,407	12,460	11,250	62%	27%	6%	5%
0762	Farm management services	15,106	188	8,451	4,514	996	1,145	56%	30%	7%	8%
0781	Landscape counseling and planning	10,130	238	6,240	651	242	2,997	62%	6%	2%	30%
0782	Lawn and garden services	65,464	889	48,896	2,343	1,259	12,966	75%	4%	2%	20%
0783	Ornamental shrub and tree services	9,132	167	6,852	520	169	1,591	75%	6%	2%	17%
08 - 09	Forestry & Fishing	1,128	8	592	389	93	54	52%	34%	8%	5%
10 - 14	Mining	264	6	0	162	102	0	0%	61%	39%	0%
15 - 17	Construction	13,910	176	0	7,877	6,023	10	0%	57%	43%	0%
20 - 39	Manufacturing	33,504	445	0	20,867	12,594	43	0%	62%	38%	0%
40 - 49	Transportation	8,194	144	0	5,381	2,807	6	0%	66%	34%	0%
50 - 59	Trade	43,226	509	0	26,300	16,890	36	0%	61%	39%	0%
60 - 67	FIRE	4,391	82	0	2,569	1,819	3	0%	59%	41%	0%
70 - 89	Services	42,981	594	0	25,145	17,805	31	0%	59%	41%	0%
91 - 98	Public Administration	1,078	28	0	713	363	2	0%	66%	34%	0%
> = 99	All Other SICs	1,184	7	0	800	384	0	0%	68%	32%	0%

Table 2: Primary Jobs Analysis, 2001

2001											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
01, 02, 07	Agriculture	876,782	9,932	572,669	152,946	41,851	109,316	65%	17%	5%	12%
01	Agricultural Production--Crops	322,269	3,594	203,936	70,108	18,029	30,196	63%	22%	6%	9%
02	Agricultural Production--Livestock	49,776	888	36,969	3,793	1,409	7,605	74%	8%	3%	15%
07	Agricultural Services	503,760	5,440	331,492	78,552	22,261	71,455	66%	16%	4%	14%
011	Cash Grains	3,573	46	2,430	545	210	388	68%	15%	6%	11%
013	Field Crops, except Cash Grains	14,909	205	10,222	2,752	712	1,223	69%	18%	5%	8%
016	Vegetables and Melons	55,052	634	34,218	13,458	3,028	4,348	62%	24%	6%	8%
017	Fruits and Tree Nuts	151,780	1,292	91,588	37,784	9,773	12,635	60%	25%	6%	8%
018	Horticultural Specialties	55,744	1,020	40,431	5,089	2,092	8,132	73%	9%	4%	15%
019	General Farms, Primarily Crop	41,211	397	25,047	10,480	2,214	3,470	61%	25%	5%	8%
021	Livestock, Except Dairy And Poultry	9,223	154	6,619	786	265	1,553	72%	9%	3%	17%
024	Dairy Farms	20,167	358	16,012	1,432	557	2,166	79%	7%	3%	11%
025	Poultry and Eggs	16,155	309	11,459	1,173	430	3,093	71%	7%	3%	19%
027	Animal Specialties	3,255	52	2,276	209	106	664	70%	6%	3%	20%
029	General Farms, Primarily Animal	976	14	603	193	51	129	62%	20%	5%	13%
071, 072, 076	Ag Farm Services	320,278	2,182	206,589	71,979	18,635	23,075	65%	22%	6%	7%
074, 075, 078	Ag Non-Farm Services	183,482	3,258	124,903	6,573	3,626	48,380	68%	4%	2%	26%
0111	Wheat	229	3	152	48	15	14	66%	21%	7%	6%
0112	Rice	2,223	29	1,507	334	131	251	68%	15%	6%	11%
0115	Corn	197	2	124	28	10	35	63%	14%	5%	18%
0116	Soybeans	15	0	10	1	1	3	67%	7%	7%	20%
0119	Cash grains, nec	909	12	637	134	53	85	70%	15%	6%	9%
0131	Cotton	7,409	112	5,250	1,298	324	537	71%	18%	4%	7%
0133	Sugarcane and sugar beets	237	3	142	71	14	10	60%	30%	6%	4%
0134	Irish potatoes	1,227	13	835	202	55	135	68%	16%	4%	11%
0139	Field crops, except cash grains, ne	6,036	76	3,995	1,181	319	541	66%	20%	5%	9%
0161	Vegetables and melons	55,052	634	34,218	13,458	3,028	4,348	62%	24%	6%	8%
0171	Berry crops	32,018	255	20,720	6,780	1,781	2,737	65%	21%	6%	9%
0172	Grapes	66,199	583	38,864	17,146	4,530	5,659	59%	26%	7%	9%
0173	Tree nuts	12,453	133	8,132	2,352	803	1,166	65%	19%	6%	9%
0174	Citrus fruits	5,367	64	3,425	1,289	244	409	64%	24%	5%	8%
0175	Deciduous tree fruits	23,220	142	12,300	7,463	1,803	1,654	53%	32%	8%	7%
0179	Fruits and tree nuts, nec	12,523	116	8,147	2,754	612	1,010	65%	22%	5%	8%
0181	Ornamental nursery products	49,635	881	35,672	4,700	1,948	7,315	72%	9%	4%	15%
0182	Food crops grown under cover	6,109	139	4,759	389	144	817	78%	6%	2%	13%
0191	General farms, primarily crop	41,211	397	25,047	10,480	2,214	3,470	61%	25%	5%	8%
0211	Beef cattle feedlots	1,120	19	805	112	57	146	72%	10%	5%	13%
0212	Beef cattle, except feedlots	5,890	103	4,248	583	159	900	72%	10%	3%	15%
0213	Hogs	187	3	122	33	7	25	65%	18%	4%	13%
0214	Sheep and goats	1,960	28	1,395	52	41	472	71%	3%	2%	24%
0219	General livestock, nec	66	1	49	6	1	10	74%	9%	2%	15%
0241	Dairy farms	20,167	358	16,012	1,432	557	2,166	79%	7%	3%	11%

2001											
SIC	Industry Title	Primary or max earnings job in this SIC	Total Earnings in This SIC \$ Million	Only job in this SIC	At least 2 Ag Ers	At least 2 Ag Ers, plus 1 Non-Ag	1 Ag Er, plus 1 Non-Ag Er	Ag Only as % of Prim Jobs	2nd Ag % of Prim	2nd Ag 1 non-ag % of Prim	1 Ag plus 1 non-ag % of prim
0251	Broiler, fryer, and roaster chicken	5,877	107	3,534	443	191	1,709	60%	8%	3%	29%
0252	Chicken eggs	2,641	48	1,892	278	80	391	72%	11%	3%	15%
0253	Turkeys and turkey eggs	6,544	140	5,208	379	125	832	80%	6%	2%	13%
0254	Poultry hatcheries	225	3	162	29	3	31	72%	13%	1%	14%
0259	Poultry and eggs, nec	868	11	663	44	31	130	76%	5%	4%	15%
0271	Fur-bearing animals and rabbits	49	1	34	1	2	12	69%	2%	4%	24%
0272	Horses and other equines	1,058	15	753	76	46	183	71%	7%	4%	17%
0273	Animal aquaculture	555	11	391	28	15	121	70%	5%	3%	22%
0279	Animal specialties, nec	1,593	26	1,098	104	43	348	69%	7%	3%	22%
0291	General farms, primarily animal	976	14	603	193	51	129	62%	20%	5%	13%
0711	Soil preparation services	2,630	55	1,842	361	100	327	70%	14%	4%	12%
0721	Crop planting and protecting	9,201	127	5,722	2,053	458	968	62%	22%	5%	11%
0722	Crop harvesting	9,322	98	5,389	2,605	568	760	58%	28%	6%	8%
0723	Crop preparation services for marke	54,416	691	34,169	11,601	2,872	5,774	63%	21%	5%	11%
0724	Cotton ginning	2,801	28	1,661	773	135	232	59%	28%	5%	8%
0741	Veterinary services for livestock	1,442	29	944	143	81	274	65%	10%	6%	19%
0742	Veterinary services, specialties	26,603	534	20,681	430	199	5,293	78%	2%	1%	20%
0751	Livestock services, exc. veterinary	720	13	552	43	13	112	77%	6%	2%	16%
0752	Animal specialty services	10,404	156	7,482	295	150	2,477	72%	3%	1%	24%
0761	Farm labor contractors	225,934	991	148,468	50,560	13,277	13,629	66%	22%	6%	6%
0762	Farm management services	15,974	192	9,338	4,026	1,225	1,385	58%	25%	8%	9%
0781	Landscape counseling and planning	23,031	734	13,725	1,012	441	7,853	60%	4%	2%	34%
0782	Lawn and garden services	109,402	1,581	73,181	4,086	2,437	29,698	67%	4%	2%	27%
0783	Ornamental shrub and tree services	11,880	212	8,338	564	305	2,673	70%	5%	3%	23%
08 - 09	Forestry & Fishing	977	10	272	493	152	60	28%	50%	16%	6%
10 - 14	Mining	446	10	0	233	213	0	0%	52%	48%	0%
15 - 17	Construction	30,394	463	0	15,295	15,091	8	0%	50%	50%	0%
20 - 39	Manufacturing	38,738	567	0	21,785	16,940	13	0%	56%	44%	0%
40 - 49	Transportation	11,136	211	0	6,672	4,454	10	0%	60%	40%	0%
50 - 59	Trade	55,324	759	0	30,233	25,071	20	0%	55%	45%	0%
60 - 67	FIRE	6,744	150	0	3,727	3,016	1	0%	55%	45%	0%
70 - 89	Services	63,650	1,004	0	34,847	28,782	21	0%	55%	45%	0%
91 - 98	Public Administration	1,382	36	0	902	479	1	0%	65%	35%	0%
> = 99	All Other SICs	1,953	14	0	1,179	774	0	0%	60%	40%	0%

¹ A system of classifying all employers by type of business (industry) devised by the federal government to permit comparison of industry data in all facets of the U.S. economy. Major Groups, such as Agricultural Production-Crops 01, are identified by two-digit SICs; Industry Groups, such as Cash Grains 011, are identified by three-digit SICs; and specific Industries, such as Wheat 0111, are identified by four-digit SICs. Agricultural SICs are comprised of Agricultural Production-Crops (SIC code 01), Agricultural Production-Livestock and Animal Specialties (SIC code 02), and Agricultural Services (SIC code 07).

² All employees reported by at least one employer in industries identified by SICs 01 (Crops Production), 02 (Livestock) or 07 (Agricultural Services) to the Employment Development Department for unemployment insurance purposes. An "agricultural employee" may have worked in a variety of capacities including office worker, supervisor, truck driver, mechanic, as well as fieldwork or livestock work.

³ Any business unit, employer or entity in the SIC Major Groups 01, 02 or 07. An establishment can be a store, farm, packinghouse, etc., where operations are performed, goods are produced, or services provided. It usually operates at a single physical location and is engaged primarily in one type of business activity. An SIC code is assigned to the establishment on the basis of its primary economic activity.

⁴ Records demonstrating the following characteristics were excluded from the analysis:

- records reporting 50 or more employers for the same SSN;
- records reported under SSN 999999999, a clearly invalid SSN;
- records reporting earnings of less than one dollar or greater than \$75,000 for a single quarter;

records showing that an employee worked during a quarter but no wages were reported for that employee during the quarter.

⁵ This may, in part, mean that the increased number of individual workers needed to produce the increased tonnage worked outside the pay periods containing the 12th of each month in a given quarter. The 12th of the month pay period is the period for which employers are asked to report the number of their employees.

⁶ We converted earnings in 1991 and 1996 to 2001 earnings using the Employment Cost Index (ECI) for private industry in the western region, for wages and salaries only. We adjusted earnings using the ECI rather than the Consumer Price Index (CPI) because the ECI measures changes in the price of labor including wages and salaries, while the CPI measures changes in the price of goods and services. Because the ECI specifically measures changes in wages, the Federal Bureau of Labor Statistics (BLS) strongly recommends using the ECI when converting nominal wages to real wages. See BLS Handbook of Methods, April 1997, Chapter 8 (<http://stats.bls.gov/hom/homch8.pdf>).

⁷ Agricultural services sector includes both farm and nonfarm agricultural services, such as veterinary services and lawn and garden services. FLCs accounted for 70 percent of the employees reported by farm agricultural services.

⁸ The "agriculture" employees and earnings totals include employees and earnings reported by nonfarm agricultural services establishments, veterinary services and lawn and garden services.

⁹ USDA-NASS reported that annual average earnings of field and livestock workers in 2001 were \$8.02; the state's minimum wage was \$6.25 an hour in 2001

¹⁰ Dardia M., E. Barbour, A. Khan, and C. Moore (2002). "Moving Up? Earnings Mobility in California," *California Policy Review*, 1(4): 1-11.

Moore, C, A Khan, M Dardia and E Barbour. 2002. Wage Mobility in California: An Analysis of Annual Earnings. California Employment Development Department.
<http://www.calmis.ca.gov/specialreports/Wage-Mobility-2002.pdf>